A Gravity Survey of the Island of Kahoolawe, Hawaii[1]

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THROUGH THE COURTESY of the U. S. Marine Corps, a gravity survey of the island of Kahoolawe was conducted in the spring of 1964. Preselected points on the island were visited by means of a helicopter, operating from Kaneohe Marine Corps Air Station, and gravity readings were taken. On the way to Kahoolawe and on return, stops were made at Kahului Airport on Maui to tie the data into the gravity network of the Hawaii Institute of Geophysics.

The instrument used was the Worden gravity meter with slow drift. Altogether, 15 observations were made on Kahoolawe within a space of 3½ hours. The observation points covered the entire island.

The field data were reduced by applying Bouguer corrections with the assumption of a surface density of 2.3 g/cm^3. The reduced data were plotted on a map of the island and contours of 5-mgal intervals were drawn. The results are shown in Figure 1. The table of principal facts is reported elsewhere (Hawaii Inst. Geoph., 1965, Table 5).

A region of high positive anomaly exists on the eastern side of the island. This agrees with surface geology, which shows a center of former volcanic activity on the eastern side of the island.

[1] Hawaii Institute of Geophysics Contribution No. 94.

REFERENCE

HAWAII INSTITUTE OF GEOPHYSICS. 1965. Data from gravity surveys over the Hawaiian Archipelago and other Pacific islands. Hawaii Inst. Geoph. Rept. 65–4, March 1965. 10 tables.

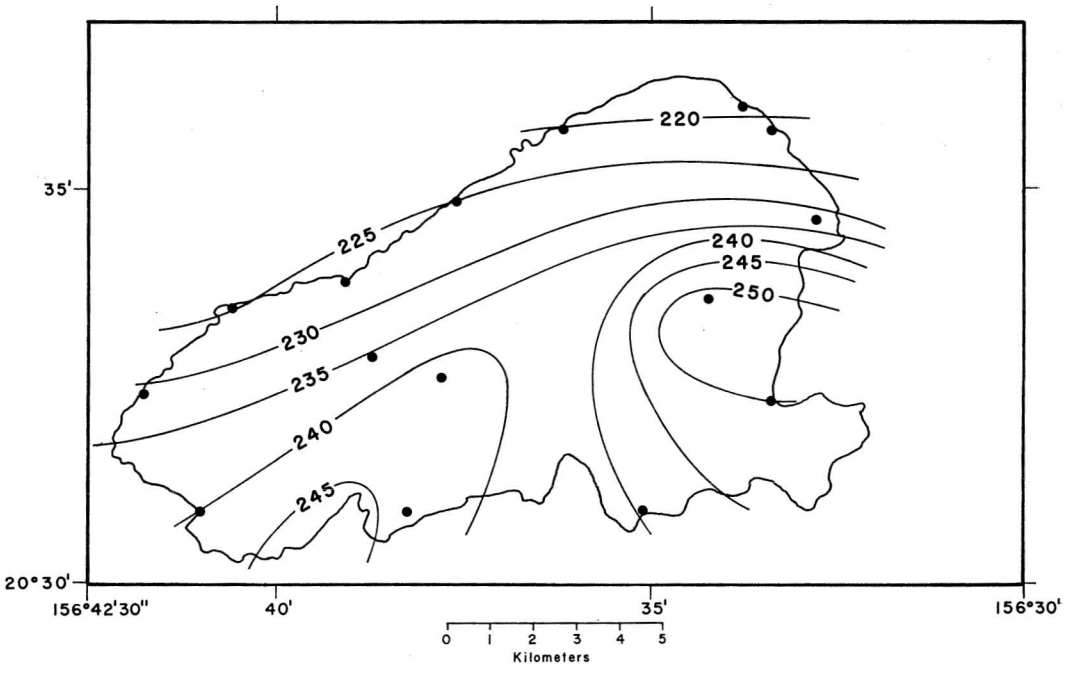

FIG. 1. Bouguer anomaly map of the island of Kahoolawe. Values are in milligals.